

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

MAILED

APR 11 2005

U.S. PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte TAKASHI INBE

Appeal No. 2005-0821
Application No. 09/960,356

ON BRIEF

Before GARRIS, WALTZ, and TIMM, Administrative Patent Judges.
WALTZ, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal from the primary examiner's refusal to allow claims 3 and 5 as amended subsequent to the final rejection (see the amendment dated Dec. 9, 2003, entered as per the Advisory Action dated Jan. 29, 2004; Brief, page 2, ¶IV; Answer, page 2, ¶(4)). Claim 4 is the only other claim pending in this application and stands allowed by the examiner (Brief, page 2, ¶III; Answer, page 1, ¶(3)). We have jurisdiction pursuant to 35 U.S.C. § 134.

According to appellant, the invention is directed to a semiconductor device for detecting neutrons comprising a

semiconductor substrate, a boron containing layer formed on the substrate containing the isotope ^{10}B , a PN junction formed on the surface of the substrate below the boron containing layer, and where electron-positive hole pairs are generated in a depletion layer of the PN junction by α rays generated by a reaction between the neutrons and the isotope ^{10}B (Brief, page 2). The neutrons are detected on the basis of the quantity of the electron-positive hole pairs, and the semiconductor device further comprises an analyzing circuit portion on the semiconductor substrate in a region other than the region where the neutrons are detected, including an amplifier circuit and a single channel height analyzer circuit (Brief, page 3).

Representative independent claim 3 is reproduced below:

3. A semiconductor device for detecting neutrons comprising:
 - a semiconductor substrate;
 - a boron containing layer containing isotope ^{10}B , the layer being formed on said semiconductor substrate;
 - a PN junction formed on a surface area of said semiconductor substrate below said boron containing layer; wherein electron - positive hole pairs are generated in a depletion layer of said PN junction by α rays generated by a reaction between said neutrons and said isotope ^{10}B , and the neutrons are detected on the basis of the quantity of electric charge of the electron - positive hole pairs; and
 - an analyzing circuit portion, which includes an amplifier circuit for amplifying a signal and a single channel height analyzer circuit for selecting only a pulse with a particular height to estimate an energy spectrum of the α rays with the aid of counting or by measuring peak height distribution using a

current flowing through said PN junction, on said semiconductor substrate in a region other than the region where said neutrons are detected.

Claims 3 and 5 stand rejected under 35 U.S.C. § 112, first paragraph, for lack of enabling disclosure (Answer, page 3) and under the second paragraph since the scope of the claims is "unclear" (*id.*). We reverse both grounds of rejection on appeal essentially for the reasons stated in the Brief, Reply Brief, and those reasons set forth below.

OPINION

A. *The Rejection under § 112, ¶2*

A proper analysis of the claim language requires ascertaining if the claims are definite under the second paragraph of section 112 before an analysis of the claims under the first paragraph of section 112 can be undertaken. See *In re Angstadt*, 537 F.2d 498, 501, 190 USPQ 214, 217 (CCPA 1976).

The initial burden of establishing unpatentability, on any ground, rests with the examiner. See *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). "The legal standard for definiteness is whether a claim reasonably apprises those of skill in the art of its scope. [Citations omitted]." *In re Warmerdam*, 33 F.3d 1354, 1361, 31 USPQ2d 1754, 1759 (Fed. Cir.

Appeal No. 2005-0821
Application No. 09/960,356

1994). If one skilled in the art would understand the bounds of the claim when read in light of the specification, then the claim satisfies section 112 paragraph two. *See Miles Labs., Inc. v. Shandon, Inc.*, 997 F.2d 870, 875, 27 USPQ2d 1123, 1126 (Fed. Cir. 1993). The definiteness of the claim language employed must be analyzed, not in a vacuum, but always in light of the teachings of the prior art and the disclosure of the particular specification as it would be interpreted by one possessing ordinary skill in the art. *See In re Angstadt, supra*.

The examiner states that the word "pulse" is unclear because it is not known whether this word refers to current or voltage pulses (Answer, page 3). The examiner also argues that it is improper to read a limitation from the specification into a claim (*id.*). However, as discussed above, a proper analysis under section 112, second paragraph, does not require reading a limitation from the specification into the claim but interpreting the claimed language in light of the specification as it would have been understood by one of ordinary skill in the art. Here the specification clearly teaches that the "pulsation of a current" flowing through the PN junction is measured by the analyzing circuit, and therefore one of ordinary skill in this art would have been apprised that the scope of the word "pulse"

refers to current (see the specification, page 6, ll. 9-13, italics added; Brief, page 4; and Reply Brief, pages 1-2).

The examiner also finds that the scope of the "single channel height analyzer circuit ... through said PN junction" is unclear (Answer, page 3). The only supporting statement presented by the examiner is that it is unclear how "selecting only a pulse with a particular height" is related to the "counting" or the "measuring peak height distribution" (*id.*). We determine that the examiner has not met the initial burden of establishing why this claim language is "unclear" or indefinite, i.e., the examiner has not presented any cogent reasoning why one of ordinary skill in this art would not have been apprised of the scope of the contested language. See the specification, page 3, ll. 21-28, and page 6, ll. 2-15. Although the examiner contests the "enabling disclosure" for the single channel height analyzer circuit (see the rejection *infra*), that fact does not render the claim imprecise or indefinite. See *In re Ehrreich*, 590 F.2d 902, 906-07, 200 USPQ 504, 508 (CCPA 1979).

For the foregoing reasons and those stated in the Brief and Reply Brief, we cannot sustain the examiner's rejection of claims 3 and 5 under the second paragraph of 35 U.S.C. § 112.

B. *The Rejection under § 112, ¶1*

As previously discussed, the initial burden of proof rests with the examiner to establish a lack of enabling disclosure (or that undue experimentation is required to practice the claimed invention). *See In re Wright*, 999 F.2d 1557, 1561, 27 USPQ2d 1510, 1513 (Fed. Cir. 1993).

The examiner merely states that the disclosure at page 3, 11. 21-28, and page 6, 11. 2-17, does not enable any person skilled in the art to make the "single channel height analyzer circuit" (Answer, page 3). As correctly argued by appellant (Brief, pages 5-6; Reply Brief, page 3), the examiner has not met the initial burden of proof. Although the *Wands* factors¹ are not mandatory but merely illustrative, the lack of enablement depends on an analysis of several factual inquiries. *See Amgen Inc. v. Chugai Pharmaceutical Co.*, 927 F.2d 1200, 1213, 18 USPQ2d 1016, 1027 (Fed. Cir. 1991). Here the examiner has not made any underlying factual inquiries, other than to conclude that the breadth and nature of the invention is "unclear" (Answer, page 4). The examiner should have determined, *inter alia*, what was well known in the art, since well known subject matter need not

¹*In re Wands*, 858 F.2d 731, 735-37, 8 USPQ2d 1400, 1402-04 (Fed. Cir. 1988).

Appeal No. 2005-0821
Application No. 09/960,356

be described in the specification. See *In re Buchner*, 929 F.2d 660, 661, 18 USPQ2d 1331, 1332 (Fed. Cir. 1991). Thus the examiner should have determined whether the "fundamental" circuits for the analysis circuit portion 1B disclosed by appellant (specification, page 3, ll. 21-28) were well known in this art, or could have been practiced by one of ordinary skill in this art with only routine experimentation. In the absence of any underlying factual inquiries, we cannot sustain a rejection for lack of enabling disclosure.

For the foregoing reasons and those stated in the Brief and Reply Brief, we determine that the examiner has not met the initial burden of proof in establishing failure to meet the "how to make and use" (enablement) requirement of section 112, first paragraph. Therefore we reverse the examiner's rejection of claims 3 and 5 under 35 U.S.C. § 112, first paragraph.

C. Summary

The rejection of claims 3 and 5 for failing to fulfill the requirements of the first paragraph of 35 U.S.C. § 112 is reversed. The rejection of claims 3 and 5 for failing to meet the requirements of the second paragraph of 35 U.S.C. § 112 is also reversed.

Appeal No. 2005-0821
Application No. 09/960,356

The decision of the examiner is reversed.

REVERSED

Bradley R. Garris

BRADLEY R. GARRIS)
Administrative Patent Judge)

Thomas A. Waltz

THOMAS A. WALTZ)
Administrative Patent Judge)

Catherine Timm

CATHERINE TIMM)
Administrative Patent Judge)

) BOARD OF PATENT
APPEALS
AND
INTERFERENCES

TAW/jrg

Appeal No. 2005-0821
Application No. 09/960,356

McDermott, Will & Emery
600 13th Street, N.W.
Washington, DC 20005-3096